BANNOCK PAVING COMPANY (PWS 6030065)
SOURCE WATER ASSESSMENT FINAL REPORT

May 31, 2001

State of Idaho
Department of Environmental Quality

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality (DEQ) is completing the assessments for all Idaho public drinking water systems. The assessment for the Bannock Paving Company drinking water source is based on a land use inventory within a 1,000 foot radius of the well source, sensitivity factors associated with the source, and characteristics associated with either your aquifer or watershed in which you live.

This report, *Source Water Assessment for the Bannock Paving Company (PWS # 6030065)* describes the public drinking water system, the associated potential contaminant sources located within a 1,000 foot boundary around the drinking water source, and the susceptibility (risk) that may be associated with any associated potential contaminants. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this system. **The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the Bannock Paving Company water system.**

The Bannock Paving Company drinking water system consists of one well (Figure 1). The potential contaminant sources within the delineation capture zone include a mine (sand and gravel) and wastewater land application site (Figure 2). Contaminants of concern are business chemicals such as petroleum products and inorganic chemicals (nitrates).

The capture zone for this well intersects a priority area for the volatile organic chemical Tetrachloroethene. This chemical is a colorless liquid, commonly used as a cleaning agent in dry cleaning and other textile industry applications. It was identified because at least 25% of the local area wells have detections greater than 1% of the primary standard or other health standard. Tetrachlorethene concentrations have been detected in the drinking water greater than the Maximum Contaminant Level (MCL).

The susceptibility of the well to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement.

Hydrologic sensitivity was rated moderate for the well. This is based upon poor to moderate drained soil classes defined by the National Resource Conservation Service (NRCS). The well is also potentially sensitive due to the make up of the vadose zone (zone from land surface to the water table) and the lack of 50 feet of low permeability units between the surface and the water producing zone of the aquifer. Well construction was rated moderate for the well. The well construction directly affects the ability to protect the aquifer from contaminants. The well casing and annular seal do not extend into a low permeable geologic formation, two important aspects of proper well construction. The well is located outside the 100-year floodplain and protected

from surface runoff. The final susceptibility ranking for the well is moderate for inorganic, synthetic organic contaminants and microbial contaminants and high for volatile organic contaminants (Table 2). A copy of the susceptibility analysis for the Bannock Paving Company water system along with a map showing any potential contaminant sources is included with this summary. Information regarding the potential contaminants within the 1,000-foot boundary have been summarized and included in Table 1.

Table 1. Bannock Paving Company Potential Contaminant Inventory

Site #	Source Description	Source of Information	Potential Contaminants
1	Sand and Gravel site	Database Inventory	VOC, SOC
2	Wastewater Land Application Site	Database Inventory	VOC, SOC

UST = underground storage tank, VOC = volatile organic chemical, SOC = synthetic organic chemical,

Table 2. Summary of Bannock Paving Company Susceptibility Evaluation

	Susceptibility Scores[1]									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	**Final Susceptibility Ranking**			
Well		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
1	M	M	M	L	L	M	M	H*	M	M

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical, H* = Indicates source automatically scored as high susceptibility due to the detection of a VOC in the finished drinking water

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the Bannock Paving Company, source water protection activities should focus first on implementations of keeping the drinking water free of Tetrachloroethene. A 1998 sanitary Survey states bottled water is provided to the employees due to the presence of Tetrachloroethene in the drinking water. The water system may want to consider drilling a new well or install a treatment unit when and if funds become available. The water system should also consider developing a wellhead protection plan. Source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. For assistance in developing protection strategies please contact the Pocatello Regional Office of the Idaho Department of Environmental Quality at (208) 236-6160.

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (IDEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100-year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RCRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by IDEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory

The final scores for the **Bannock Paving Company** susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.375)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

> 13 High Susceptibility

Ground Water Susceptibility Report Public Water System Name :BANNOCK PAVING COMPANY INC Public Water System Number 6030065 Well Source

1. System Construction		SCORE				
Drill Date		9/19/96				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	1998			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		NO	1			
Well located outside the 100 year flood plain		YES	0			
	Total System Construction Score		4			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		YES	0			
Vadose zone composed of gravel, fractured rock or unknown		YES	1			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		NO	2			
	Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A		IRRIGATED PASTURE	1	1	1	1
Farm chemical use high		NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A		YES	NO	YES	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A		1	1	1	1
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		YES	1	1	1	1
(Score = # Sources X 2) 8 Points Maximum			2	2	2	2
Sources of Class II or III leacheable contaminants or		YES	3	1	0	
4 Points Maximum			3	1	0	
Zone 1B contains or intercepts a Group 1 Area		YES	0	2	0	0
Land use Zone 1B		25 to 50% Irrigated Agricultural Land	2	2	2	2
	Total Potential Contaminant Source / Land Use Score - Zone 1B		7	7	4	4
Cumulative Potential Contaminant / Land Use Score			8	8	5	5
4. Final Susceptibility Source Score			10	10	9	10
5. Final Well Ranking			Moderate	High	Moderate	Moderate